

ABSTRACT

It is intended to provide an artificial mammalian chromosome which is stably held in mammalian cells and allows efficient expression of a target gene carried thereby. Namely, a first cyclic vector containing a mammalian centromere sequence and a selection marker gene and a second cyclic vector containing a functional sequence are transferred into mammalian host cells. Then transformed cells are selected by using the above-described selection marker gene and cells holding an artificial mammalian chromosome are selected from among the transformed cells thus selected. Thus, it is possible to construct an artificial mammalian chromosome which has a mammalian replication origin, the mammalian centromere sequence and the functional sequence, is in a cyclic form, can be replicated in mammalian cells, extrachromosomally held in the host cells and transferred to daughter cells in cell division.